a privately owned wood situated near the southern border of the county. The majority of trapping was by the use of a white sheet with a 125-watt mercury vapour lamp placed in the centre approximately two feet six inches above the sheet. While running one of these traps on 6.v.1990, an unknown tortricid was caught. This was later identified by Mr E. F. Hancock as a specimen of *Pammene suspectana*, the sixth record for Britain.

The first record of the species occuring in Britain was in 1975 when a specimen was caught, in Cambridgeshire, in a pheromone trap used in commercial plum orchards to moniter the incidence and flight activity of the male plum fruit moth (*Cydia funebrana* Treits.), subsequent records were in 1976 again in a Cambridgeshire pheromone trap; 1979 in Worcestershire in a pheromone trap; 1984 in a light trap in Wiltshire and finally in 1986, when one was found resting on foliage in Berkshire.

I am most grateful to Mr E. F. Hancock for his assistance with the identification of this moth and for preparing the genitalia slide.—Barry Dickerson, 27 Andrew Road, Eynesbury, St Neots, Huntingdon, Cambridgeshire PE19 2QE.

Attraction of *Palloptera usta* Meigen (Diptera: Pallopteridae) to recently cut conifer wood and other notes on Pallopteridae.—*Palloptera usta* is a mainly Scottish species in Britain, as noted by J. E. Collin (1951) in his revision of British Pallopteridae. Collin also recorded it from two localities in Norfolk and I found it in Essex in 1989 (recorded in the field meeting report by Plant, 1989).

I first found this species at Grantown on Spey, 17.viii.1986, where four females were found around the sapping stumps of recently cut pines. At Thorndon Park, Essex on 30.vii.1989 a male and two females were found around a stack of cut pine logs, from which sap was exuding. Then two females were found at rest on the cut ends of a stack of pine logs at Grantown on Spey again on 22.ix.1989. I also have single examples swept in pine forest at other Scottish localities: a male from Rothiemurchus, by River Luineag, 17.ix.1989; a female at Loch Garten, 17.ix.1989; a male from Rannoch Black Wood, 2.viii.1990. Several individuals were also present around a stack of conifer logs at Vyšne Hágy, East Slovakia, Czechoslovakia on 5.ix.1990. No indication of feeding by the adult flies was obtained on any of these occasions.

The larvae of *P. usta* are predatory on the larvae of Scolytidae under the bark of various conifers and also birch (e.g. Morge, 1956; Martinek, 1977; Ceianu, 1989). Ceianu (1989) also swept it from spruce trunks.

The larval habit is shared with *ustulata* (Fall.) (Morge, 1956; Smith, 1957; I have reared it from elm bark attacked by *Scolytus*) and *muliebris* (Harris) (Séguy, 1934) and possibly *umbellatarum* (F.) among British species, while other species develop in herbaceous plants, although Morge (1956) suggested that the larvae of *ustulata* under maple bark were feeding on fungal mycelium in the absence of beetle larvae while he observed predation by them on other occasions. Collin (1951) cited records of *usta* and *umbellatarum* from flower heads of thistles but I suspect that the records are misidentifications of *modesta* (Meig.) (=*parallela* Loew of Collin), which is regularly associated with thistles and was frequently confused with *umbellatarum* by earlier authors. Most identifications have tended to be by wing markings and reared specimens which are likely to be in a teneral condition with markings faintly indicated are easily confused.

Collin gave records of *modesta* being reared from *Carlina* species, Parmenter (1951) found it on *Cirsium vulgare* (Savi) and Ceianu (1989) found it on flower heads of *Centaurea scabiosa* L. I have found it on the heads of *Cirsium eriophorum* (L) with *Terellia longicauda* (Meig.) (Tephritidae) at North Leigh, Oxon, 4.viii.1970 and again in numbers on heads of *C. eriophorum* at Ždiar, East Slovakia, Czechoslovakia on 4.ix. 1990; *T. longicauda* has since been reared from flower heads collected on that occasion. I have also found *modesta* on partly open heads of *C. vulgare* at Runnymede, Surrey on 12.vii.1970 and have several records from riverside sites in Scotland where *Cirsium heterophyllum* (L.) was a likely host. It seems possible that the larvae of *modesta* are predatory on the larvae of Tephritidae within the flower heads, although Ferrar (1987) suggests a commensal relationship.

Two other species of British Pallopteridae, *saltuum* (L.) and *trimacula* Meig., develop in stems of Umbelliferae (Collin, 1951; Stubbs, 1969); I have reared *trimacula* from *Heracleum* stems while two others are associated with stem bases of Monocotyledones, *quinquemaculata* (Macq.) in grasses (Nye, 1958) and *scutellata* (Macq.) in *Juncus* (as first suggested by Stubbs, 1969). The larvae of *quinquemaculata* are apparently phytophagous and this may be true of all species in herbaceous plants, although predation on other dipterous larvae cannot be ruled out until more detailed observations are made. All of these flies are generally found on or around their food plants, although *scutellata* is often found sheltering amongst denser vegetation in autumn or early spring as females apparently hibernate.

The life history of the other less well known British species is unknown. I have found *P. ambusta* (Meig.) on several occasions, but always single females swept from dense herbaceous or shrubby vegetation in deciduous woodland, sometimes where diffuse sunlight is present. Collin (1951) recorded it only from Hereford while Fonseca (1952) found it regularly at one site in Gloucestershire. My records are: Hants, Selborne Hanger, 4.vii.1970, scrub at foot of steep slope in beech woodland; Isle of Wight, Rowridge Valley, 2.viii.1980, chalk scrub; Cornwall, near Coombe, 7.vii.1986, low vegetation in damp ash woodland; Gwent, Black Cliff, 9.vii.1986, scrub in sunlit clearing in dry ash wood; Oxon, Cothill, 2.vii.1989, low tree foliage by shaded footpath alongside carr woodland.—P. J. Chandler, Weston Research Laboratories, Vanwall Road, Maidenhead, Berkshire SL6 4UF.

References

Ceianu, I. 1989. Contributions to the knowledge of some families of Diptera Acalyptrata in Romania. 1. *Trav. Mus. Hist. Nat.* «*Grigore Antipa*» **30**: 21–36.

Collin, J. E. 1951. The British species of the genus *Palloptera* Fallén (Diptera). *Ent. Rec. J. Var.* **63**: Supplement No. 5: 1–6.

Ferrar, P. 1987. A guide to the breeding habits and immature stages of Diptera Cyclorrhapha. *Entomonograph* **8(1)**: 1–748 (pp. 271–273).

Fonseca, E. C. M. d'Assis. 1952. A note on *Palloptera ambusta* Mg. and other species of Pallopteridae. *Ent. Rec. J. Var.* **64**: 91–92.

Martinek, J. 1977. Species of the genus *Palloptera* Fallén, 1820 (Dipt., Pallopteridae) in Czechoslovakia. *Stud. Ent. Forest.* **2**: 203–220.

Morge, G. 1956. Über Morphologie und Lebensweise der bisher unbekannten Larven von *Palloptera usta* Meigen, *Palloptera ustulata* Fallén und *Stegana coleoptrata* Scopoli (Diptera). *Beitr. Ent.* **6**: 124–137.

Nye, I. W. B. 1958. The external morphology of some of the dipterous larvae living in the Gramineae of Britain. *Trans. R. Ent. Soc. Lond.* **110**: 411–487.

Parmenter, L. 1951. Notes on the distribution of Pallopteridae in Britain. *Ent. Rec. J. Var.* **63**: 304–306.

Plant, C. W. 1989. Thorndon Park, Essex, 22 July 1989. *Br. J. Ent. Nat. Hist.* **2**: 176.

Séguy, E. 1934. *Faune de France: 28 Diptères (Brachycères) (Muscidae et Scatophagidae)*. 1–832. Paris.

Smith, K.G.V. 1957. Some miscellaneous records of bred Diptera. *Ent. Rec. J. Var.* **69**: 214–216.

Stubbs, A. E. 1969. Observations on *Palloptera scutellata* Mcq. in Berkshire and Surrey and a discussion on the larval habitats of British Pallopteridae (Dipt.) *Ent. Mon. Mag.* **104**: 157–160.

***Renocera striata* (Meig.) (Diptera: Sciomyzidae) in Norfolk.**—Single males of *Renocera striata* (Meig.) were captured at three separate sample locations in the Norfolk Broadland during 1988, using pitfall and water trapping techniques: Sutton Broad Marshes, TG 373234, 9–23.vi.88, pitfall; Rose Fen, Catfield, TG 374204, 5.vii–12.viii.88, pitfall; Catfield Great Fen, TG 365210, 12–24.viii.88, water trap. All three localities are in East Norfolk (VC 27) and situated on the flood-plain of the River Ant.

The above records represent a marked south eastern extension to the known range of *R. striata* in Britain, with the majority of authenticated records being restricted to the Spey valley in Elgin (VC 95) and Easterness (VC 96). Ball & McLean (1986) provide a preliminary distribution map and Falk (in press) reviews the known records for Britain. *R. striata* has also been found in Ireland, with Chandler (1972) listing the known Irish records. Its biology is unknown, though Knutson (1970) believed that the larvae may attack pea mussels of the family Sphaeriidae. In addition, Stephenson & Knutson (1970) report that *Renocera* spp. and *Ilione (Knutsonia) lineata* (Fall.) eat only calcifuge Sphaeriidae. All three of the above trapping stations were located on peat substrates and *I. lineata* was also present at the two Catfield localities during 1988.

These Norfolk records for *R. striata* have resulted from an extensive invertebrate survey of East Anglian wetlands, carried out by the Nature Conservancy Council. The known localities for *R. striata* in this region are, currently, confined to the River Ant valley, a site recognized for its outstanding conservation value in supporting one of the largest remaining areas of undeveloped species-rich fen in Britain. Though present at three sample stations, *R. striata* was not recorded from a further 67 operated in Norfolk and Suffolk during 1988. Moreover, all were investigated during similar time periods and by using the same sampling techniques (a row of five pitfalls plus two water traps), these included many trapping stations located in the other principal valley fen systems of the Norfolk Broadland, outwith the River Ant.

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References

Ball, S. G. & McLean, I. F. G. 1986. *Sciomyzidae Recording Scheme Newsletter* **2**: *Preliminary atlas*. Nature Conservancy Council, Peterborough.

Chandler, P. J. 1972. The distribution of snail-killing flies (Diptera: Sciomyzidae) in Ireland. *Proc. Br. Ent. Nat. Hist. Soc.* **5**: 1–21.

Falk, S. J. (in press). *A review of the scarce and threatened flies of Great Britain (part 1). Research and survey in nature conservation*. Nature Conservancy Council, Peterborough.

Knutson, L. V. 1970. Biology of snail-killing flies in Sweden (Dip., Sciomyzidae). *Ent. Scand.* **1**: 307–314.

Stephenson, J. W. & Knutson, L. V. 1970. The distribution of snail-killing flies (Dipt., Sciomyzidae) in the British Isles. *Ent. Mon. Mag.* **106**: 16–21.